

<b>INVITATION TO BID</b>		<b>LSU</b>	<b>BID DUE DATE AND TIME</b>	
BOARD OF SUPERVISORS OF LOUISIANA STATE UNIVERSITY AND AGRICULTURAL & MECHANICAL COLLEGE			<b>11/17/2016      11:00 AM      CT</b>	
<b>SOLICITATION RFQ-0000000086</b> <b>SUPPLIER #</b> <b>SUPPLIER NAME AND ADDRESS</b> <div style="border: 1px solid black; height: 100px; width: 350px; margin-top: 10px;"></div>			<b>RETURN BID TO</b> Louisiana State University and Agricultural and Mechanical College Procurement 213 Thomas Boyd Hall Baton Rouge, LA 70803  <b>Buyer</b> Holly Bofinger Leonards <b>Buyer Phone</b> +1 (225) 578-6482 x6482 <b>Buyer Email</b> hollyl@lsu.edu <b>Issue Date</b> 10/20/2016	
<b>TITLE: Open Jet/Wind Tunnel Equipment</b>  <b>Addendum 03 – Revised specifications and bid due date extension.</b>  See attached for revised specifications. The referenced solicitation has been extended for one week. The new bid due date is November 17, 2016 at 11:00 AM CST. Notice is given to all parties that this Solicitation is amended by the University as stated herein. This Addendum is hereby made an official part of this Solicitation.				
<p style="text-align: center;"><b>To Be Completed By Supplier</b></p> 1. _____ "No Bid" (sign and return this page only). 2. _____ My Company does not wish to receive future solicitations for this spend category. 3. Specify your Delivery: To be made within _____ days after receipt of order. 4. If applicable, Supplier's Addendum Acknowledgement/Response: As an authorized agent/signatory of the supplier, I/we acknowledge receipt of this Addendum, and _____ submit no alterations/clarifications to our original bid. _____ submit superseding revisions/clarifications to our original bid as written herein or attached hereto.				
<p style="text-align: center;"><b>General Instructions to Suppliers</b></p> 1. Sealed bids for furnishing the items and/or services specified are hereby solicited, and will be received by LSU Procurement at the "Return Bid To" address stated above, until the specified due date and time. 2. Read the entire solicitation, including all terms, conditions and specifications. 3. All bid information and prices must be typed or written in ink. Any corrections, erasures or other forms of alteration to unit price are to be initialed by the supplier. 4. Bid prices are to be quoted FOB LSU/Destination and inclusive of any and all applicable shipping and handling charges unless otherwise specified in the solicitation. Any invoiced delivery charges not quoted and itemized on the LSU purchase order are subject to rejection and non-payment. 5. Payment is to be made within 30 days after receipt of properly executed invoice, or delivery and acceptance, whichever is later. 6. By signing this solicitation, the supplier certifies compliance with all general instructions to suppliers, terms, conditions and specifications; and further certifies that this bid is made without collusion or fraud.				
<b>SUPPLIER NAME</b>			<b>MAILING ADDRESS</b>	
<b>AUTHORIZED SIGNATURE</b>			<b>CITY, STATE ZIP</b>	
<b>PRINTED NAME</b>			<b>PHONE #</b>	
<b>TITLE</b>			<b>FAX #</b>	
<b>E-MAIL</b>			<b>FEDERAL TAX ID #</b>	

**Open-Jet/Wind Tunnel Equipment**  
**Revised Specifications 11/9/16**

**Description:**

This equipment is required for generating wind flow for aerodynamic testing. The following are more details about the system requirement:

**Fan/Motor Units**

- Four total axial flow fan/motor units.
- Each unit must have a minimum capacity of 80,000 CFM with a minimum static pressure of 5 inwg.
- Two fan/motor units will be floor mounted. Provide provisions to bolt to a concrete slab. The other two fan/motor units are to mount on top of the first two units. This will form a 2x2 arrangement of fan/motor units. Provide provisions for all four fans to mount together with the top fans mounted to the bottom fans.
- Manufacturer must provide the lateral load at max cfm fans for design the anchoring system.

**Electrical**

Provide a remote mounted, variable speed drive (VFD) for each fan/motor unit to permit running the fans at variable speeds. Four total VFDs will be required (one for each fan/motor unit). Each fan/motor unit and associated VFD shall be capable of starting the fans individually or together and ramping up to full speed. When starting all fans together, the VFD and fan unit combination shall be capable of being started so that the total motor current of the four fan/motor units together never exceeds the total motor nameplate full load amps (FLA) of the four fan motors added together while still having sufficient starting torque to start and ramp the fans properly up to speed.

**Fan Motors:**

- 460V, 3 phase, 60 Hz, induction type, horsepower as required
- TEAO enclosure
- NEMA Design Code B, kVA Code G max
- Service Factor of 1.15 minimum
- 40 deg C ambient continuous duty rating
- Inverter duty rated and suitable for use with the VFD provided
- Manufactured by Baldor Electric Company or equal

**Variable Speed Drives:**

- One VFD per fan motor (four total)
- 480V, 60 Hz, 3 phase input power
- 35,000 AIC overall fault rating

- Rated to operate the fan motor provided (460V, 3 phase ) for the hp and FLA of the fan motor controlled
- Input circuit breaker
- Door mounted HOA switch
- Motor electronic thermal overload protection relay
- Overload, overvoltage, undervoltage, ground fault, stall prevention, heatsink overheat, and momentary overcurrent protection
- Utilize the latest generation of IGBT power modules
- Real time battery backed clock
- User friendly configuration tools including unit mounted LCD display, application presets, and a USB copy capability allowing portable transfer from office PC to the drive through a USB connection
- Average mean time between failure (MTBF) of 28 years minimum
- Overload tolerance of 120% of rated output current for 60 sec.
- Adjustable carrier frequency of 2 to 10 kHz
- Allowable Voltage fluctuation of -15% to +10%
- Allowable frequency fluctuation of +/-5%
- Cooling fan
- DC link choke
- Control method of V/f
- Frequency control range of 0.01 to 400 hz
- Frequency accuracy of +/- 0.01% of max output frequency for digital input and +/-0.1% of max output frequency for analog input
- Frequency setting resolution of 0.01 Hz for digital inputs and 1/2048 of max out freq for analog inputs
- Output frequency resolution of 0.001 Hz
- Frequency setting methods of 0 to +10V, 4 to 20 mA, pulse train input, network communications, and keypad
- Starting torque of V/f 150% at 3 Hz
- Speed Control Range of V/f 1:40
- Dynamic Noise Control
- Ambient temp of -10 to +40C at 95% RH or less (no condensation)
- Built in DC link reactor to provide equivalent 3% equivalent line reactance to reduce line harmonics
- AC line reactor, 3.0% nominal (6.0% total impedance when including the DC link reactor) to reduce line harmonics
- USB interface cable for direct connection between the VFD and a computer and software to allow downloading the same configuration to multiple drives
- Modbus RTU network communications capability
- UL listed
- All components (except for phase shifting transformer) configured in a single Indoor NEMA 1 enclosure with a keypad viewing window
- Yaskawa model P1000 or equal

**General:**

- Startup and checkout of the fans and VFD's by an authorized factory representative after installation and connection by others must be included in the price
- Shipping must be included in the price